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THE PLANT DISEASE REPORTER

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The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

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TOBACCO DISEASES IN VIRGINIA, 1944

Edward K. Vaughan and Wilbert A. Jenkins

Because of the dry weather which prevailed throughout most of the spring and summer, tobacco diseases generally were less severe than in most seasons. Outstanding examples were the mosaics, black root rot, sore shin, and Granville wilt. Black shank, however, continued severe, and sporadic rain storms of "cloudburst" nature contributed to the rapid spread of the disease in infested fields through washing. Much of the tobacco "buttoned" or had to be topped very low, with consequent sharp reductions in yield per acre.

Downy mildew (blue mold), Peronospora tabacina, caused severe damage in the flue-cured and fire-cured tobacco areas during a brief epiphytotic starting about April 24 (PDR 28: 482. 1944). Many plant beds were completely wiped out, and practically all beds were more or less affected, but because of the tremendous reserve of plantbed area there was no noticeable shortage of plants. The disease was present only in a few scattered beds in the burley tobacco area of southwest Virginia, and caused little damage in the air-cured tobacco area of northern Virginia.

Because of the drouth and other factors, many growers found it difficult to secure good stands and much replanting was necessary. This was particularly true in the central section of the State.

Granville wilt, Bacterium solanacearum, was much less severe than in the previous season, except on occasional farms which were favored by frequent rainfall. The disease did not appear in abundance until mid-July and even in fields where it had caused severe losses in 1943 the number of plants affected was much smaller this season. The disease was found in only a few new locations, one in Brunswick County where it was seen for the first time on burley tobacco.

Black shank, Phytophthora parasitica var. nicotianae, continued to appear in new, widely separated localities. Although it was not reported from any counties where it had not previously been encountered (PDR 27: 643-645. 1943), a number of new infestations were located in Pittsylvania, Halifax, and Charlotte Counties, some of them several miles north of any previously reported infestation. One infestation on the Charlotte-Appomattox County line is well within the area where fire-cured tobacco is grown, although the disease has not yet been found on this crop in Virginia. Losses in certain fields ran as high as 95%.

The distribution of black shank infestations continues to be mystifying. In one or two localities a half dozen or more farms in a single community are infested and the spread of these infestations can be traced from one farm to another. In most localities, on the other hand, the disease has been found on only one or two farms within a radius of several miles. In Halifax County, for example, the presence of the disease has been definitely established on 14 farms in 11 widely separated sections of the county. In Pittsylvania County it is known to be present on 21 farms in at least 8 widely separated sections of the county. It is difficult to understand how the disease can spread over considerable distances and yet not become generally distributed on all or most of the farms in any extensive area.

Sore shin, Rhizoctonia sp., was much less prevalent than in most years. It was present in all tobacco growing sections of the State but only a few affected plants were observed in any one field.

Because resistant varieties are being used more extensively than in the past, black root rot, Thielaviopsis basicola, annually becomes less of a problem for the grower. Burley tobacco suffered most from this disease, but even so the losses were not great.

Rootknot, Heterodera marioni, was found in Halifax and Pittsylvania Counties, but did not cause extensive damage. In most cases only low sections of the fields appeared to be heavily infested.

Both Alternaria and Cercospora leafspots were present in most areas but did not cause economic losses. Wildfire, Bacterium tabacum [Pseudomonas tabaci] was sufficiently severe in southwest Virginia to cause concern to the growers early in the season, but after the plants had been set in the field the disease quickly disappeared. Mosaic and Ringspot virus diseases caused comparatively little damage. Only rarely was the percentage of infected plants great enough to cause the growers any concern, and losses were negligible.

Brown root rot (apparently associated with meadow nematode [Pratylenchus pratensis] injury) appears to be on the increase. Due to the climatic peculiarities of the season, it was difficult to distinguish brown root rot from damage caused solely by the drouth. The disease was widespread in Pittsylvania, Halifax, Charlotte, Mecklenburg, Lunenburg, and Brunswick Counties. Measurable losses attributed to the stunting effect of the disease were evident on all varieties seen. Plants similarly affected were received from Southampton County. Although these plants had had a favorable season, plus 1200 pounds of a 3-9-6 tobacco fertilizer per acre, the grower stated that 50 to 60% of the plants in a 2-acre field had never grown more than 2 feet tall and had never attained a normal green color. It seems reasonable to assume that much of the failure to obtain stands, and the subsequent poor growth of the bright tobacco crop during this season was caused by meadow nematode injury.

VIRGINIA AGRICULTURAL EXTENSION DIVISION and VIRGINIA AGRICULTURAL EXPERIMENT STATION.

REPORTS ON DISEASES OF TOBACCO AND COTTON

Except where noted, reports are of Emergency Plant Disease Prevention Project surveys.

TOBACCO DISEASES IN MASSACHUSETTS: Mosaic (Virus) was found in 18 of the 20 tobacco fields examined. Prevalence ranged from a trace to 90% with 5 fields having 70% or over. Average infection for the 18 fields was 28%. Mosaic is unusually prevalent this year and is the most widespread disease in Massachusetts tobacco fields.

Sore-shin (Rhizoctonia sp.) was found in 7 of the 20 fields. Only a trace was present in 4 fields and from 1 to 3% was present in the other 3 fields. Sore-shin seemed to be most prevalent in Whately and Sunderland.

A trace or more of Nonparasitic Leaf Spot could be found in practically all fields. It was unusually prevalent in 2 fields: about 20% of the plants were affected in one field in North Hadley, and about 25% in one Whately field.

Three plants infected by the Ringspot virus were found in a 4-acre field in Agawam by Dr. Paul R. Miller and the writer. Although these plants seemed to manifest true symptoms of Ringspot some reservation must be made in view of the fact that they were also affected to some extent with Mosaic. If this should prove to be true Ringspot it will be the only report of the disease in the last 14 years and will probably be found to be the first report of Ringspot in Massachusetts. -- Robert C. Cassell, August 21-24.

TOBACCO DISEASES IN CONNECTICUT: Counts for Mosaic were made in 3 fields in Windsor and East Granby, Hartford County, August 25. A trace was present in one field, 3% in another, and 34% in the third field. A trace of Nonparasitic Leaf Spot was present in 4 fields in Rainbow, Windsor, and Granby. -- Robert C. Cassell.

TOBACCO WILDFIRE IN NEW YORK: Wildfire (Pseudomonas tabaci) was observed in tobacco seedbeds on several farms in Chemung County. -- L. H. Woodward, Weekly News Letter, June 12.

COTTON DISEASES IN LOUISIANA: Surveys during the week of August 21 to 26 were conducted in the northwestern portion of the State. Fusarium Wilt (F. [oxysporum f.] vasinfectum) and Mineral Deficiencies (Potassium and Magnesium were the only ones recognized) were considered to be the most damaging diseases of cotton in this area. Traces of both Wilt and Deficiency troubles were found in every field observed and in some fields from 30 to 40% of the plants were affected. In the region around Cushatta, one or more perfectly circular "Rust" areas from 10 to 20 feet in diameter were noted in practically every field. As a rule, "Rust" areas in fields are more or less irregular in outline, or only scattered plants in a field will be "rusted". Leaf Spot fungi (Cercospora, Alternaria, Phyllosticta, and Ascochyta, prevalence in order named) were found to be abundant on "rusted" but uncommon on healthy plants. As a matter of record, it should be noted that Rhizoctonia Leaf Spot (R. solani) was found in trace amounts throughout the area. No Boll Rots have been found as yet but some worm damage has been noted. -- Douglas C. Bain.

DISEASES OBSERVED ON COTTON IN ARKANSAS: Approximately 450 acres were surveyed during the period from July 27 to August 12. Angular Leaf Spot (Xanthomonas malvacearum) was observed in several plantings, and was especially severe in fields for which the seed was not treated. The amount of reduction in leaf area varied from a trace to nearly 40%. The most severely affected field was observed in Desha County where Leaf Spot was bad enough to cause yellowing of the leaves as well as moderate defoliation. Fusarium-wilt affected plants were rather limited as observed during this period. The only area showing any extensive loss was in Jefferson County between Wabbaseka and Altheimer where loss was more than 10%. Verticillium Wilt (V. albo-atrum) was observed in Mississippi County; infections were localized and limited to a small area in each affected field. Leaf Spots caused by Alternaria and Cercospora were observed in several plantings but loss caused by them was slight at this time. -- Howard W. Larsh.

DISEASES OBSERVED ON POTATOES IN NORTHERN CALIFORNIA

Horace L. Barnett

During the week ending August 26, a trip was made in company with Dr. M. W. Gardner and Dr. J. B. Kendrick to inspect the potato crop grown in the vicinities of Tulelake and Dorris in northern California. One day was spent with Mr. Branstetter and Dr. R. C. Baines of the California Department of Agriculture. In this area approximately 2000 acres of potatoes are being grown this year for seed certification. The varieties are mainly White Rose, Netted Gem, and Burbank. There is also somewhat over 10,000 acres grown commercially for market; these are mostly Netted Gems.

In general, the potato crop was relatively free from disease throughout the area and indications pointed toward a good yield if killing frosts hold off for several days. In fields grown for seed certification only traces of the virus diseases Leaf Roll, Giant Hill, and Calico were found; somewhat more Mosaic was found in some fields. Relatively few fields had been thrown out of certification because of Mosaic. The current season spread in this area is not great. Small amounts of Rhizoctonia disease (Rhizoctonia solani) and Black Leg (Erwinia phytophthora) were observed. Black Leg often appeared to follow Rhizoctonia infection.

In the fields grown for commercial production all the diseases listed above were found in varying amounts. Only Mosaic was found in high percentages, reaching nearly 100% in some fields. The Mosaic symptoms in this area are often mild and the reduction in yield is probably not great. Leaf Roll was quite severe in some fields, being as high as 30% in one field; considerable reduction in yield is expected where it is severe.

Scattered plants showing symptoms similar to those seen in the Bakersfield area earlier in the season and reported (See PDR 28 (16): 524-525) as probably an undetermined disease (possibly virus) were found throughout the area. Here, the symptoms somewhat resemble leaf roll and may be confused with that disease, although it is thought to be distinct from it.

Bacterial Ringrot (Corynebacterium sepedonicum) was found in only 2 fields and the percentage of infection was small in both of these. These observations on Ringrot were in surprising contrast to those made earlier in Kern and Madera Counties (PDR 28 (16): 523-525.

EMERGENCY PLANT DISEASE PREVENTION PROJECT.

POTATO DISEASES IN WISCONSIN

Edwin E. Honey

During the period July 24 to August 9, inspections were made on potatoes in Rock, Walworth, Racine, Kenosha, Milwaukee, Ozaukee, Waukesha, Washington, Dodge, Fond du Lac, Manitowoc, Kewaunee, Brown, and Door Counties, according to a schedule suggested by Professor R. E. Vaughan and Dr. R. H. Larson.

Varieties encountered were Irish Cobbler, Red Warba, Early Ohio, Bliss Triumph, Chippowa, Katahdin, Russet Burbank, Russet Rural, Rural New Yorker, Sebago, and Sequoia.

In many cases the date of planting had been delayed by wet weather. Spray or dust for the control of Blight and insects was being used extensively especially in the more southerly counties. Many growers in the Kenosha-Racine area were applying very much stronger concentrations of Bordeaux mixture than the standard 4-4-50 or 5-5-50 commonly recommended.

In general, potato fields were looking very good so far as diseases were concerned but were beginning to show slight damage from drought especially on upland locations. Even a few plantings on muck soil were affected by the drought. Two rains, totalling about 0.75 inch, during the week of July 23-29 gave some relief from the dry conditions in the Kenosha-Racine area.

While early varieties such as Cobbler were not completely filled out and mature, the market demand was such that digging was under way in Walworth and Milwaukee Counties during the week of July 30 to August 5.

Traces of Mosaic were found on Cobbler and Russet Rural in Kenosha County, Katahdin in Racine County, Cobbler, Russet Rural and Chippewa in Walworth County, and Russet Rural in Rock County.

Yellow Dwarf (Virus) also occurred in traces in Katahdin and Chippewa fields in Racine County, in Rural New Yorker in Milwaukee County, Katahdin in Fond du Lac County, and Pontiac, Cobbler, and Sebago in Manitowoc County. From a trace to 5% infection was noted on White Rural and Russet Rural in Door County.

Bacterial Ringrot was present in an undetermined amount in an undug field of Sebago in Manitowoc County.

A trace of Blackleg was observed on Irish Cobbler and Red Warba in Kenosha County, and from a trace to slight or moderate infection on Cobbler, Chippewa, Red Warba, and Katahdin in Racine County.

From a trace to slight infection by Scab (Actinomyces scabies) was noted on Red Warba, Cobbler, and Chippewa in Racine County; slight infection on Red Warba and Cobbler in Kenosha County and on Rural New Yorker in Dodge County; slight to moderate amounts on Chippewa, Cobbler and Katahdin in Manitowoc County; and a trace on Bliss Triumph in Rock County.

Traces of Early Blight (Alternaria solani) were observed on Cobbler in Racine County and on Chippewa in Washington and Manitowoc Counties.

Wilt caused by Fusarium spp. was observed as follows: in Kenosha County, a trace on Katahdin and a trace to 1% on Cobbler; Racine County, trace to moderate infection on Cobbler (severe in spots) and trace to 1% on Katahdin; Walworth County, trace on Chippewa; Milwaukee County, trace on Rural New Yorker; Ozaukee County, trace on Chippewa and Katahdin; Waukesha County, trace in Sebago and Katahdin; Manitowoc County, trace on Cobbler, Chippewa, and Katahdin; Door County, trace on Cobbler and Russet Rural and slight infection on Sebago.

Wilt, cause undetermined, occurred in traces on Cobbler and slight amounts on Katahdin in Racine County, and in traces on Katahdin in Fond du Lac County and on Katahdin and Chippewa in Manitowoc County.

Rhizoctonia solani causing stem cankers occurred in slight amounts on Red Warba in Walworth County; traces to slight infection on Cobbler, Katahdin, and Chippewa in Racine County; traces on Bliss Triumph in Rock County; traces on Red Warba and traces to moderate infection on Russet Burbank in Kenosha County; traces on Rural New Yorker in Milwaukee County; slight infection on Chippewa and traces on Russet Rural in Washington County; and traces on Sebago in Waukesha County, Katahdin in Fond du Lac

County, and Cobbler, Chippewa, and Katahdin in Manitowoc County.

Only traces of Hopperburn were observed in well-sprayed fields, but it was severe in unsprayed or poorly sprayed fields in Kenosha, Racine, Walworth, Manitowoc, Kewaunee, and Door Counties.

Loss of acreage by drowning out did not appear to be as great as last year. Some was observed on both muck and upland in Kenosha County and a trace to slight amounts in Racine and Manitowoc Counties.

Varietal mixtures were not conspicuously common but were observed in some instances, the greatest amount noted being in a 2-acre field in Door County.

A very poor stand of the Chippewa variety was observed on one farm in Ozaukee County. The cause for both missing hills and weak plants appeared to be improper handling of the seed, which had been cut and, because of continued rains in the spring, allowed to stand for several weeks before planting in a moist environment in which it developed a rotted, slimy condition.

The Rootknot Nematode (Heterodera marioni) was observed in small amounts in most counties visited.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

REPORTS ON POTATO LATE BLIGHT

NEW ENGLAND: Twelve fields were examined in the Berkshire Hill country of Hampshire and Franklin Counties, Massachusetts (Aug. 21-24). Potatoes in this area are much later in development than in the Connecticut River Valley. Green Mountains and Katahdins are now in the late blossom stage. No Late Blight (Phytophthora infestans) could be found in any of the 12 fields. Neither could any active Late Blight be found in the Connecticut River Valley potato fields this week, where it was known to have gained a good start before the extremely hot dry week of August 13.

Dr. F. L. Howard reports finding Late Blight in one field on Fog Point in Little Compton, Newport County, Rhode Island, on August 4. The infection was general and heavy over 3/4 of the field. Surveys of potato fields in that and other areas (Aug. 17-18) failed to reveal the presence of any other Blight. Dry conditions throughout Rhode Island have undoubtedly restricted the general development and spread of Blight. Fogs are general on Fog Point and that fact combined with the spray program probably accounts for its presence in the one field.

A survey of Connecticut potato fields was made August 14-16 in company with Dr. J. G. Horsfall and Dr. G. A. Gries. Cobblers and Chippewas were being dug, especially in the drier areas of the State. No Late Blight was found and none has been reported this year. Connecticut is the only New England State in which Late Blight has not been found this year. Most areas of the State have been extremely dry and the intense hot weather of the last week has damaged all crops severely. -- Robert C. Cassell, Emergency Plant Disease Prevention Project.

NEW YORK: (Reports from Weekly News Letter, Aug. 28). Late Blight got off to a good start this year but was checked by a long period of hot dry weather. As a result, comparatively little damage has yet been caused by it. The fungus, however, is not dead, for it has been found recently

sporulating on potato vines in small areas where conditions for its development have been favorable from time to time. -- M. F. Barrus

Late Blight has been noted in Suffolk County on Long Island, especially on second growth in irrigated fields, but is not of epiphytotic proportions. -- George Gyrisko.

In Saratoga County Late Blight, which appeared in the first part of August, has not done too much damage, probably because of the hot weather in the middle of August. -- D. C. Deuel.

In Monroe County recently there have been a few Late Blight nights, and we have advised growers to renew control measures. -- R. G. Palmer

In Steuben County an infection seen started in a dense growth of vines protected by a barn on August 2, was completely checked in its development by weather conditions up to August 24. -- R. W. Leiby.

WEST VIRGINIA: In Randolph County potatoes are for the most part mature, several weeks early because of dry weather. In many fields Late Blight is present, but an epidemic was prevented by the drought. -- R. E. Atkinson, Emergency Plant Disease Prevention Project. August 16-26.

OTHER REPORTS ON DISEASES OF POTATO

Except where noted reports are of Emergency Plant Disease Prevention Project surveys.

POTATO DISEASES IN MASSACHUSETTS: Twelve fields were examined in the Berkshire Hill country of Hampshire and Franklin Counties. Potatoes in this area are much later in development than in the Connecticut River Valley. Green Mountains and Katahdins are now in the late blossom stage. Early Blight occurred in all fields and ranged from 10 to 100% prevalence with an average of about 70%. Except for one field where the disease was severe, infection was generally light to moderate. Scab was found in the few hills dug in 7 of the 12 fields. Average prevalence was about 5% and except for one case of heavy infection it was mostly light. Rhizoctonia was found in 2 fields; only a trace was present in one while a light infection occurred on 60% of the tubers examined in the other. A trace of Blackleg was found in one Hewlay field where a slight amount of tuber rot was already present. A trace of Purple-Top (Aster Yellows Virus) was found in one Northington field. -- Robert C. Cassell, Aug. 21-24.

DISEASES IN CONNECTICUT: A survey was made in company with Dr. J. G. Horsfall and Dr. G. A. Gries, August 14-16. Cobblers and Chippewas were being dug, especially in the drier areas. Counts were made for Scab not only in the early fields, but also in the later maturing varieties, in fields and parts of fields where Scab was known to be most prevalent. The over-all percentage of scabby potatoes in these worst affected areas was 59.1, which included those tubers with one or more lesions. Counts were based on 10 hill samples from each field. Early Blight was found in most fields. The general area of Marion-Windsor-Broad Brook seemed to be most seriously affected. In this area prevalence was almost 100% and severity was at least moderate. In southern Connecticut and near Putnam in the northeastern part of the State Early Blight seemed less prevalent and less

severe. Most areas of the State have been extremely dry and the intense hot weather of the last week has damaged all crops severely. Late potatoes, which were green and healthy a week ago, now have between 1/2 and 3/4 of the tops killed. The early potatoes are yielding between 50 and 75% of a normal crop and the late potatoes will also be reduced in yield.

A few scattered hills were examined throughout one field in Poquonock, Hartford County, August 25. Rhizoctonia was present in slight to moderate amounts on 50% of the tubers. -- Robert C. Cassell

DISEASES AND DROUGHT INJURY IN NEW YORK: (Reports from Weekly News Letter for dates indicated). On the North Fork of Suffolk County on Long Island, much Early Blight could be found in all fields, and it, together with dry weather and Hopperburn, has caused the potatoes to retreat much sooner as lack of rain remained the major potato problem. -- G. Gyrisko, Aug. 14.

Continued drought conditions prevail in Erie County. Rainfall for the first part of August has been limited to 0.25 inch, the first precipitation since July 26 when a similar fall was recorded. Mean temperatures this month have been in the low 80's. No hope is held any longer for average yields from early-planted potatoes. Although tuber set was heavy as a rule, size remains only that of a golf ball, a marketable sized tuber being found as an exception and then only singly per hill. As yet, the heat and drying have not had any telling effect upon the later potatoes. -- Joe Jodka, Aug. 14.

In Erie County a field of Sebago grown from State Certified seed shows 28% Leaf Roll infection. Purple-Top has been observed in 2 fields being certified along with Leaf Roll and Mosaic. -- L. E. Curtis, July 31.

Some Leaf Roll is common in most Allegany County fields where no new seed has been introduced recently. Mohawk appears to be quite susceptible. A field of Bliss was found in which 50% of the plants were affected with Purple-Top. -- V. C. Stevenson, Aug. 14.

SOME UNUSUAL DISEASE OCCURRENCES IN WEST VIRGINIA: In Randolph County, many leaves that were apparently first killed by blight showed cankers at the bases of the petioles. The top above the canker usually died, thus resulting in withered drooping tips with most lower leaves green and healthy. A fungus fruiting on these cankers was determined by Dr. Lindsay S. Olive as Phoma solanicola Prill. & Delac., and according to Dr. Olive the symptoms observed fit those described as being caused by this fungus.

In a 25-acre field that was a total loss from flood and drought according to the grower, Sclerotium rolfsii and S. bataticola as well as Phoma solanicola were found.

Early Blight is present in all fields. The stem lesions caused by Alternaria solani were found in only one field. (See also Late Blight report above). -- R. E. Atkinson, Aug. 17-26.

REPORTS ON DISEASES OF TOMATO

Reports are of Emergency Plant Disease Prevention Project surveys.

NEW ENGLAND: Early Blight (Alternaria solani) was observed in most fields examined in York and Cumberland Counties in southern Maine, where

infection was light and prevalence ranged from 25 to 75%, and in southern New Hampshire, where infection was usually light to moderate on 20 to 100% of the plants. Light infections on about 50% of the plants were observed in a Westminster, Vermont, truck garden, in one field in Kingston, Rhode Island, and in one field in Mansfield, Connecticut. A heavy attack of Leaf Mold (Cladosporium fulvum) was affecting the lower leaves of about 10% of the plants in a small planting in Hudson, New Hampshire. Less than 1% of Mosaic (Tobacco-Mosaic Virus) was present in a 2-acre field in Cape Elizabeth, in southern Maine. A severe case of Blossom-End Rot (Physiogenic) was found in a very dry area in Connecticut, at North Haven, where in a small field 45% of the ripening fruits were affected. In parts of the field up to 75% of the fruits were affected. -- Robert C. Cassell, Aug. 9-18.

VIRGINIA: Tomato fields and canneries in the vicinity of Roanoke and Floyd were surveyed by the writer in company with Dr. R. G. Henderson of the Virginia Polytechnic Institute. Drought was severe. Early Blight was the most common and most severe disease; it was present in all fields observed and causing defoliation in all but 2. Lesions were general on leaves and stems, and often occurred on the fruit. Petiole and stem lesions caused most damage. Septoria Leaf Spot (S. lycopersici) was common especially on the upper leaves. The characteristic gray center was lacking completely on the upper surface, and pycnidia were visible only on the under side of the leaf. Mosaic was found in several fields, but in no case did the percentage of plants affected exceed 10. One plant was found with fruit showing symptoms of Yellow Mosaic. Blossom-End Rot was more common in the Floyd area where tomatoes are grown on the ridges than near Roanoke where they are grown in the valley. The most common Fruit Spot was the Nailhead Spot (Alternaria tomato). Some Anthracnose (Colletotrichum phomoides) was found in tomatoes at the canneries. A trace of Buckeye Rot (Phytophthora parasitica) was seen. -- R. E. Atkinson, Aug. 17-26.

ARKANSAS: Approximately 500 acres were surveyed during the period from July 27 to August 12. Early Blight was observed in several of the fields examined. It appeared rather early in the growing season; however, owing to lack of rainfall and continuous hot weather its further development has been curtailed. In some areas where the so-called "local rains" have occurred, Early Blight developed to the extent of causing slight defoliation of the lower leaves. Yellowing of the plants as a whole due to an early attack by Early Blight was observed in one field in Benton County.

Septoria Leaf Blight remains the most prevalent leaf disease of tomatoes in this area. Early infections caused yellowing of the leaves and in many instances slight to moderate defoliation. The most severe infection observed was in a 5-acre planting near Alma in Crawford County, where a moderate amount of defoliation as well as considerable yellowing of nearly all of the plants resulted.

Fusarium Wilt (F. bulbigenum var. lycopersici)[F. oxysporum f. lycopersici] was observed in several plantings in Benton County. Over 10% loss of plants had occurred in a 3-acre planting near Hiwasse in this county.

Southern Blight (Sclerotium rolfsii) was present in several plantings. The most severe infections occurred in Arkansas, Crawford, Hempstead, and Washington Counties. A loss of nearly 25% of the plants was caused in a

small planting near Hope in Hempstead County, and a similar loss occurred in a small trial planting on the experiment station at Fayetteville.

Tomato fruits affected by Nailhead Spot were observed in Crawford and Washington Counties. Dr. J. R. Shay collected several typical examples in trial plantings on the experiment station at Fayetteville. Infected fruits were more abundant in earlier than in later harvests.

Collar Rot caused by Alternaria solani was observed in 2 small plantings. Near Searcy in White County only a few plants showed characteristic symptoms of Collar Rot, but large cankers were observed on 4 plants in this field. Similar specimens were collected from a planting near Little Rock in Pulaski County. -- Howard W. Larsh

ILLINOIS: During the week ending August 5 a survey was made in north, north-central, and western Illinois, by Dr. M. B. Linn of the Illinois Agricultural Experiment Station and the writer. Only occasional plants with Aster Yellows (Virus) were observed in Whiteside and Peoria Counties, traces of Mosaic in Cook County, and a trace of Leaf Roll (Physiogenic) in Peoria County.

At Lomax, however, in Henderson County, the tomato canning acreage was in poor condition, with the troubles perhaps traceable to one or more lots of southern-grown plants (from Georgia and Tennessee). Several fields, not seen, were reported to be in excellent condition, but plants in these fields were from different southern shipments. In one 4-acre field planted to Rutgers, 25% of the plants were estimated to be affected by Collar Rot caused by Alternaria solani. Infected plants still alive showed the Early Blight stage. Replants of Indiana Baltimore were 50% wilted or dying due to Fusarium Wilt. In addition, Bacterial Spot, caused by Xanthomonas vesicatoria, was very conspicuous on the green and maturing fruit. It was difficult to estimate losses due to each of these 3 diseases because of the mixed infection. However, from a close observation of several fields, it can be stated that loss in yield will probably be about 45% due to the combined effects of the 3 diseases in the fields examined. The canning factory owners estimated the loss on 500 acres in Henderson and Hancock Counties at 50% of the crop normally expected.

The survey during the week ending August 19 was made in central, western, and southwestern Illinois, again in company with Dr. Linn. In McLean County, 70 acres, planted to Rutgers, Marglobe, Pritchard, and Indiana Baltimore, were visited. These tomatoes were in good condition, only traces of Fusarium Wilt, Septoria Leaf Spot, and Bacterial Speck (Bacterium punctulans) [B. tomato] being observed. The Tobacco-Mosaic Virus was present in practically all plants in several rows of Rutgers. It was learned later that one of the planters was an inveterate tobacco chewer.

In Adams County, occasional plants with Aster Yellows were observed, also traces of Early Blight as well as traces of the diseases already mentioned as present in McLean County. In 5 acres of the Bo-Kay variety, 50% of the plants were infected with the Fusarium Wilt organism. This variety was being grown by several growers and was supposedly somewhat wilt-resistant.

Tomatoes examined at a cannery in the East St. Louis district showed Anthracnose on an occasional fruit, and Soil Rot probably caused by various organisms. Rutgers appeared to be the predominating variety grown in this

area, Madison County. Except for a 3-acre direct-seeded plot with 10% Fusarium Wilt the 6 fields visited were in excellent condition. -- J.S.Tidd.

WISCONSIN: Traces of Mosaic and of Early Blight were noted in Racine County, and Wind Injury was observed in several fields. -- Edwin E. Honey, July 24-August 9.

MISSOURI: Commercial tomato plantings in the vicinity of Trenton in Grundy County were examined for diseases during the week ending August 5. The first pickings were being made for canning purposes. The vines appeared to be in unusually good condition. Septoria Leaf Spot was just beginning to become established on the older foliage and on a few scattered plants had caused slight damage. Fusarium Wilt was evident to a limited extent in most plantings, affecting on an average about 3% of the plants. Blossom-End Rot was the most prevalent fruit disease, affecting approximately 2 to 3% of the set. Growth Cracks, Insect Injury, etc., were fairly prevalent and in many instances were followed by secondary decay. An estimated 5% of the fruits were thus affected.

Commercial plantings for canneries in Barry County, examined during the week ending August 25, were in excellent condition. Fruit set and yields appeared to be exceptionally good. The vines were in good condition except for light leaf spotting due to Alternaria solani and Septoria lycopersici. Alternaria stem lesions were evident but did not appear to be damaging. Fusarium Wilt appeared to be of minor importance, although a few fields showed a few scattered plants, not exceeding 2% of the stand, with Wilt symptoms. Except for the usual Growth Cracks, Insect Injuries, etc. which permit the entrance of secondary decay producing organisms, affecting an estimated 10% of the fruit set, and Blossom-End Rot which ranged from a trace to 5%, no serious fruit diseases were observed. Buckeye Rot (Phytophthora sp.) affecting from a trace to 3% of the fruits, and a trace of Anthracnose infection, were noted. -- T. W. Bretz.

MONTANA: In the Orchard Homes area near Missoula in western Montana, one plant in a small commercial planting was found affected with Fusarium Wilt. -- C. M. Slagg, July 24-29.

COLORADO: Tomatoes in the canning district of Otero County in the vicinity of Manzanola were noticeably free from disease when examined during the week ending August 12 in company with Dr. W. A. Kreutzer of the Colorado Experiment Station. Traces of Aucuba Mosaic (Virus), Verticillium Wilt (V. albo-atrum), and Early Blight were noted. -- E. W. Bodine

CURLY TOP AND AN UNDETERMINED WILTING IN WASHINGTON: Curly Top (Virus) was prevalent on tomatoes for canning in fields examined August 5 in Asotin County, with John Keene, Horticultural Inspector at Clarkston. Infection at present was about 3 to 10%, but later infection might reduce the crop seriously. A trace of Blossom-End Rot was noted.

Extensive plantings of tomatoes were observed in the Spokane Valley August 8 to 10. Curly Top infection was about 1 to 5% but damage was generally slight. Plant growth was regarded as smaller than usual. Blossom-End Rot was noted.

In one planting of approximately 3 acres of the Stokesdale variety, about

25% of the plants showed slight to complete wilting and dying. Nearly 100% of the plants were affected in some small areas in the field. The grower stated that this was the third year the land had been planted to tomatoes but the first year that this particular disease was noted. The disease, termed "Wilt" by the writer and called "Fusarium Wilt" by the local growers, appeared first as a necrosis of the lower center leaves and progressed until the whole plant was involved or in some cases wilted suddenly. Progress of the disease in affected plants and spread through the affected patch was quite rapid. The roots of the affected plants were not rotted, and only a mild discoloration of vascular tissue was found except that the inner tissues of the larger stems were brown and necrotic. The disease appeared to invade plants from the tops down.

Curly Top was affecting about 2% of the plants in the field.

The Wilt is present in other fields and is reported to be very severe in some of them. The cause is undetermined as yet. Apparently the disease is new to this area, at least, it has not been recognized before by the local growers. In any event it has assumed serious proportions, since this field observed is under cannery contract.

Some other fields of the same variety showed not a trace of Wilt. -- Earle C. Blodgett.

BEAN DISEASES IN THE WILLAMETTE VALLEY OF OREGON

Lytton W. Boyle

On August 15 and 17, Dr. F. P. McWhorter, Mr. B. F. Dana, and the writer made a survey of bean fields near Eugene, Salem, Dayton, Forest Grove, Scappoose, and Portland, with the aid of field men of processing companies. Fields in this area are generally planted with some strain of the Blue Lake variety.

Growers and processors are very much concerned about a diseased condition that has become increasingly obvious in the plantings during the past few weeks. Losses vary from as much as 80% down to traces in respective plantings, and have become of sufficient magnitude to justify special attention in the research program.

Several symptoms were observed, including: (1) a brown flecking in root tissue which varies in severity and either is a symptom of or is followed by a root rot; (2) internal discoloration of the stems; (3) discoloration at nodes on lower parts of the plant; (4) vein necrosis; (5) various degrees of chlorosis and necrosis of the leaves; (6) eventual blighting or rapid death of the plant; (7) a severe dwarfing type of mosaic.

All 7 of these symptoms may be observed on different parts of the same plant. In the effort to catalogue these symptoms 2 things may be noted: first, the severe dwarfing type of mosaic may occur alone on a plant, and second, the discoloration of the lower nodes is a consistent symptom and may occur with various combinations of the other symptoms except the mosaic. Although these 2 types may occur on separate plants, in only one instance has the mosaic type been noted to occur in a field without the other.

In comparisons between seed sources, greater differences were observed between separated fields sown with the same seed lot, than between seed lots from different sources. The history of the fields did not yield any

evidence that the condition was more common on land where beans had been grown previously. In some instances the trouble was more evident at the periphery of fields, but this was not consistent. Attempts to correlate prevalence or distribution with the location of other fields of leguminous crops were not convincing in the locations where observed.

In summary, there appears to be a complex of perhaps 2 diseases that consistently are observed together and cause serious loss in certain plantings. The severity of the loss appears to be correlated with some factor or factors operating within widely scattered localized areas.

During this survey, the Pellicularia [filamentosa] stage of Rhizoctonia was noted on the stems of plants near Forest Grove. This stage appears rather uncommonly in this area as a whole. Rust (Uromyces phaseoli var. typica) was noted to be prevalent in plantings in Lane County. This disease is increasing in importance in this area. Plantings observed in other localities appeared to be free from Rust. In Multnomah County, mites were causing rather localized necrotic lesions on leaves which at first were suspected to be due to some fungus infection.

In bean fields examined August 24 in the vicinity of Albany, vines of Early Stringless Blue Lake beans were injured severely by Sclerotinia rot (S. sclerotiorum). The trouble was limited to lower parts of the field and did not represent a large loss to the crop.

A severe dwarfing type of Mosaic was evident. In this instance, it was more evident in Late Blue Lake than in Stringless or Early Blue Lake and was not uniformly scattered but was concentrated in respective rows in the field.

The leaves of Early Blue Lake beans were well covered with Rust pustules. The telial stage was readily evident on the lower leaves at this date. In an adjacent planting of Early Stringless Blue Lake, fewer pustules were evident on the average leaf. These fields were on land previously used for beans and the plants were supported by poles also previously used for beans. Adjacent to these was a planting of Late Blue Lake on new land and supported by new equipment. In this planting, Rust was evident only in the rows next to the old planting or at the ends of rows exposed to drafts from the old field. No control had been practiced to reduce the amount of Rust. This season the crop had been harvested from the Early Blue Lake and Early Stringless Blue Lake before severe loss occurred.

EMERGENCY PLANT DISEASE PREVENTION PROJECT

OTHER REPORTS ON BEAN DISEASES

Reports are of Emergency Plant Disease Prevention Project surveys.

In NEW ENGLAND Halo Blight (Pseudomonas medicaginis var. phaseolicola) was observed in light amounts on 2 or 3% of the leaves of Kentucky Wonder pole beans in southern Maine (Aug. 11). In Vermont prevalence was 100% in snap beans in a small garden in North Hero (July 31-Aug. 4) and in another small planting in Guilford (Aug. 8); severity was light to moderate in the former and moderate with slight loss in yield in the latter. A trace was observed on bush beans in a small planting in Windsor, Connecticut (Aug. 25); and slight to moderate amounts of Mosaic (Virus) were present in the same planting. -- Robert C. Cassell.

Approximately 225 acres were surveyed in ARKANSAS during the period July 27 to August 12. Ashy Stem Blight (Macrophomina phaseoli) was observed in several plantings. A loss of 2% occurred in fields near Marianna in Lee County and Rogers in Benton County. Affected plants were found relatively early in the growing season. Charcoal Rot (Sclerotium bataticola) was observed in nearly all fields examined. Considerable loss was sustained from an early infection by this fungus near Ozark in Franklin County. Southern Blight (S. rolfsii) continues to be a problem to growers in infested areas. It caused nearly 20% reduction in stand near Hope in Hempstead County and Fort Smith in Sebastian County. -- Howard W. Larsh.

Navy beans are grown extensively in Isanti County, MINNESOTA, being concentrated in the area surrounding Cambridge. Michelite is the principal variety grown. Bacterial Blight (Xanthomonas phaseoli) was common in all plantings observed (Aug. 21-26). Heavy leaf infection was found and the disease was developing rapidly on the pods. Up to 1% of the plants had stem infections sufficient to cause girdling of the stem. While Mosaic occurred in all fields, percentage infection was low and loss from this disease was slight. Very heavy weed growth has cut the yield in many fields.-- Ian W. Tervet

Bacterial Halo Blight was observed on beans during surveys in central MONTANA; and Rust (Uromyces phaseoli var. typica) in the eastern part of the State. -- C. M. Slagg, weeks ending July 22, Aug. 6.

In the Spokane Valley in eastern WASHINGTON, some time was spent inspecting bean plantings (Aug. 6-12). This area is relatively new to bean growing and presents an interesting cropping system. Many fields are cropped continuously to beans year after year, some of them now for the sixth year. Many varieties are represented, but most of the acreage is devoted to garden seed beans although some are grown for canning. Contrary to expectations, Root Rot [cause not designated], while noted in several fields, was not causing severe damage except in a few rather small areas. Growers acknowledged, however, that the Root Rot problem was becoming more apparent; each year the same spots were affected and enlarged. Although Common Bacterial Blight was observed rather commonly in one field of Red Kidney and one of Black Valentine this year, the disease apparently was not severe generally. Growers stated that in some seasons it has been extremely severe. Mosaic was noted infrequently.

In Asotin County in southeastern Washington (Aug. 5), one garden planting of Kentucky Wonder Bean showed 100% Mosaic and severe pod malformation. -- Earle C. Blodgett.

In Northwestern IDAHO rather extensive surveys of bean fields were made in Latah, Clearwater, and Nez Perce Counties, near Troy, Kendrick, Cavendish, and Melrose, in company with the county agent on August 15 and with a bean dealer on August 17. About 17,000 acres are grown in this area and almost all varieties of dry and seed beans are represented. Generally, beans rotate with winter wheat, taking the place of summer fallow. In the fields observed, Root Rot was noted infrequently; it was in no case severe. Mosaic, both Yellow and Common, were observed only rarely. In one field of Bountiful, one area showed extensive pod spotting typical of Red Node (Virus). -- Earle C. Blodgett.

Traces of Bacterial Blight caused by Xanthomonas phaseoli were found on lima beans in northern ILLINOIS. Dropping of blossoms and small pods (physiogenic ?) was also observed. Lima bean plants in some fields were

showing a cortical necrosis of the stem hypocotyl (cause undetermined). Whether the lesions will become serious enough to injure the plants severely remains to be seen. -- J. S. Tidd, week ending Aug. 5.

DISEASES REPORTED ON OTHER VEGETABLE CROPS

Reports are of Emergency Plant Disease Prevention Project surveys.

CELERY DISEASES IN NEW YORK: During the week of August 7-12, a study was made with Dr. A. G. Newhall, of the Department of Plant Pathology, New York State College of Agriculture, of the diseases of vegetable crops in the muck areas of western and central New York. In the Savannah area, Early Blight (Cercospora apii) was present in the 3 early-planted fields surveyed. Only occasional lesions were seen on 75% of the plants, and little damage will be done, since the celery will soon be harvested. In 4 later-planted fields no Early Blight was seen. In 2 fields the Bacterial Blight (Pseudomonas apii) [P. jaggeri] was general, with 80% of the plants showing foliar lesions. The spots were scattered thinly, and mostly over the outer leaves, so there was little prospect of a serious loss. Though the Bacterial Blight was once a very common disease of celery in this area, it is now only rarely found.

In Wayne County, Dr. Newhall made observations in a 5-acre field, equally divided, half of which was planted to Early Fortune and half to Cornell 19. The Early Fortune part showed 80% of the plants affected with Fusarium Yellows (F. oxysporum f. apii), while in the Cornell 19 part only 0.5% of the plants were affected. More than 50% of the celery grown in Wayne County is now Cornell 19. -- John Niederhauser.

OTHER REPORTS ON CELERY DISEASES: In one large acreage (50 acres) in Fulton County, INDIANA, Early Blight was common, especially on early-planted celery of the Pascal variety. The plants had been receiving weekly applications of Bordeaux but overhead irrigation may have been a contributing factor in the prevalence of this disease. -- J. S. Tidd, week ending Aug. 12.

In CALIFORNIA, celery in the vicinity of Alvarado, Alameda County, showed light infections of Late Blight (Septoria apii) and Aster Yellows (Aster-Yellows Virus). -- Horace L. Barnett, week ending Aug. 19.

DISEASES REPORTED ON CABBAGE: In CONNECTICUT, a trace of Black Leaf Spot (Alternaria brassicae) [A. circinans][1] was seen in one field in Mansfield, Tolland County. -- Robert C. Cassell, Aug. 14-18.

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[1] Nomenclature followed for the Alternaria Leaf Spot fungi on cabbage and related hosts is as follows: the "Black Leaf Spot" fungus formerly called A. brassicae (Berk.) Sacc. is now known as A. circinans (Berk. & Curt.) Bolle. The "Gray Leaf Spot" fungus hitherto known as A. herculea (Ell. & Mart.) J. A. Elliott is designated A. brassicae (Berk.) Sacc. (see PDR 27 (16): 317. Sept. 1, 1943).

In Cook County, ILLINOIS, Yellows (Fusarium oxysporum f. conglutinans) was causing severe damage in some fields. In one 1-1/2 acre planting an estimated 75% of the plants were severely infected; in another somewhat larger field 70% of the plants were infected. -- J. S. Tidd, week ending Aug. 5.

In WISCONSIN, Fusarium Yellows occurred in traces on the Bugnor variety in Kenosha and Racine Counties. In Racine County, Alternaria Leaf Spot [species not designated] was observed in traces, a trace of Downy Mildew (Peronospora parasitica) was observed in one field, Club Root (Plasmodiophora brassicae) was noted in a low spot in a field of the All Season variety, and Mosaic (Virus) occurred in traces. Multiple Heads appeared to be rather common this year; it was observed especially on the Globe variety in Kenosha and Racine Counties. Lightning Injury was observed in a field of the All Season variety in Racine County. The spot affected was about 30 feet in diameter and the affected plants remaining around the periphery showed the characteristic symptoms described and illustrated by Dr. J. C. Walker (Phytopath. 27: 858-861. 1937). -- Edwin E. Honey, July 24-August 9.

A limited acreage of cabbage is grown near Wrenshall in Carlton County, MINNESOTA. Phoma lingam was common on the leaves of most plants in some fields and was causing severe loss in a few fields. Black Rot (Bacterium campestre) [Xanthomonas campestris] occurred in some plantings, but loss from this disease was less than from Blackleg. -- Ian W. Tervet, August 21-26.

DISEASES REPORTED ON RUTABAGA: In southwestern VIRGINIA, although only a very small sample of roots were examined in any field, Club Root was found in 3 fields. Farmers reported that it was very prevalent. Leaf Spots caused by Alternaria brassicae [? Black Leaf Spot, A. circinans] and what appeared to be Cercospora bloxami were seen in all fields visited. -- R. E. Atkinson, August 17-26.

Most of the rutabagas grown in MINNESOTA are produced in a limited area of Pine County, principally around Askov. This area was examined on August 24, the writer being accompanied by C. J. Eide, E. P. DuCharme, and R. C. Rose of the University of Minnesota and C. P. Shumway, County Agent of Pine County. The principal diseases found were [Gray] Leaf Spot (Alternaria herculea) [A. brassicae], Black Rot, and a Bacterial Leaf Spot. The identity of the pathogen responsible for the Bacterial Spot is being determined by C. J. Eide and E. P. DuCharme. Boron Deficiency occurs in some fields in this area. -- Ian W. Tervet.

DISEASES OF HORSERADISH IN ILLINOIS: Traces of White Rust (Albugo candida) were observed on horseradish plants in Cook County (week ending Aug. 5), and in several of the many fields of this crop growing in Madison County (week ending Aug. 19). Brittle Root (Virus) was also found in Madison County. Small areas in several fields were located with "brittle root" plants. -- J. S. Tidd.

REPORTS OF DISEASES OF CANTALOUP: In DeKalb County, INDIANA, 10% of the plants in a selection of the Honey Rock variety in a 3-acre field were dead or dying from Bacterial Wilt (Erwinia tracheiphila). A nearby trial plot of Purdue 44 was severely infected by the same organism. Leaf Blight (Alternaria cucumerina) was also present on the remaining living plants in

both plots but was causing no appreciable harm. -- J. S. Tidd, week ending August 12.

Mosaic (Virus) was observed in 1-acre plot in Adams County, ILLINOIS, near Quincy. Otherwise, cantaloup acreage appeared in fair to good condition despite the dry summer. -- J. S. Tidd, week ending August 19.

A survey in Otero County, COLORADO, showed Angular Leaf Spot (Phytomonas [Pseudomonas] lachrymans) and Alternaria Leaf Blight to be present in trace amounts. -- E. W. Bodine, August 8-12.

DISEASES OF CUCUMBER: Anthracnose (Colletotrichum lagenarium) was found as a moderate infection on about 50% of the leaves in a small field in North Hadley, MASSACHUSETTS (Aug. 21-24). A 1-acre field in Windsor, CONNECTICUT, (Aug. 14-16), was 100% affected by Mosaic (Virus), with loss of most of the fruits. -- Robert C. Cassell.

Bacterial Wilt appeared to be more common in WISCONSIN than last year. It affected from traces to 30% or more of the plants in Kenosha and Racine Counties; its appearance was observed to follow the presence of the cucumber beetle. Some Burning of the foliage following the application of hydrated lime and calcium arsenate was a rather common occurrence. -- Edwin E. Honey, July 24-August 9.

In COLORADO, Angular Leaf Spot was found to be widespread in the vicinity of Greeley, in Weld County. Fifty percent loss in fruit due to decay and vine killing will occur in some fields. -- E. W. Bodine, August 4.

A trace of Mosaic was noted in Asotin County, in southeastern WASHINGTON.-- Earle C. Blodgett, August 5.

DISEASES OF WATERMELON IN ARKANSAS: Approximately 350 acres were surveyed during the period July 27 to August 12. Blossom-End Rot (Physiogenic) continues to be the most destructive disease of watermelons in the area. Very few, if any, plantings are free from it. In many cases from 15 to 25% of the fruits showed typical symptoms. Loss from Anthracnose was not severe in any case observed in Crawford and Hempstead Counties. The most severely affected field observed was near Ozark in Franklin County but not more than 10% of the fruits were attacked. Fusarium wilt (F. bulbigenum var. niveum) [F. oxysporum f. niveum] was observed in Crawford, Hempstead, and LaFayette Counties; in most of the diseased plantings only a few vines were infected but in a 5-acre field near Hope (Hempstead County) a loss of 10% of the vines could be attributed to Wilt. -- Howard W. Larsh.

DISEASES ON SQUASH IN NEW ENGLAND: Choanephora cucurbitarum was causing a trace of Blossom Blight in 2 fields in Scarboro in southern Maine (Aug. 11), and was observed causing Brown Rot of the fruit in 2 Massachusetts fields, one in South Deerfield with a trace of fruit rot, the other in North Hadley with about 2% (Aug. 21-24). A very slight amount of Anthracnose was found on the fruits in the Scarboro fields. Septoria cucurbitacearum was found as a light infection on about 5% of the leaves in the South Deerfield planting. In North Hadley a light infection was encountered on about 20% of the leaves and 2 to 3% of the immature fruits. -- Robert C. Cassell.

DISEASES OF LETTUCE: In York and Cumberland Counties in southern MAINE, counts were made of plants affected by Aster-Yellows Virus in a half dozen

fields where cutting was in progress. Losses ranged from 10 to 25% with an average of nearly 20%. Bottom Rot (Rhizoctonia solani) was also present in all of the fields, prevalence ranging from 10 to 90%. Some direct monetary loss could be attributed to loss of whole heads in the one field where the prevalence ranged up to 10%. -- Robert C. Cassell, August 11.

In the head-lettuce district of Rio Grande County, COLORADO, in the vicinity of Del Norte, traces of Drop (Sclerotinia sclerotiorum) were noted. Although this disease has never reached serious proportions, the practice of most growers of allowing diseased heads to decay in the field and plowing them under is considered dangerous. A few plants showing a Wilt due to a vascular infection (possibly Fusarium sp.) were noted in one field. Virus diseases were entirely absent. In general the lettuce crop was notably free from disease. -- E. W. Bodine, Aug. 8-12.

The only lettuce observed in the district surveyed in northern CALIFORNIA was on the farm operated by the Japanese near the Tulelake relocation camp, a relatively new area for truck crops. Here, a very light infection, approximately 0.5%, of Aster Yellows was found. -- Horace L. Barnett, week ending August 26.

PARSNIP DISEASES: Leaf Spot (Cercospora apii var. pastinacae) [C. pastinacae] was found in 2 fields in Scarboro in southern MAINE. One field was 100% affected with moderate to severe infection, in the other field prevalence was about 90% and severity light. A trace of Aster-Yellows was found in one field. -- Robert C. Cassell, August 11.

In the only field of parsnips observed in ILLINOIS areas surveyed during the week ending August 5, plants of the Hollow Crown and White Queen varieties in Cook County were occasionally infected with the Aster-Yellows Virus. An undetermined Root Rot was also present in the same planting. -- J.S.Tidd.

DISEASES OF PEAS IN WESTERN STATES: A survey of pod-pea districts in Rio Grande County, COLORADO, in the vicinities of Monte Vista and Del Norte, as in past years showed widespread Foot Rot infection, principally Fusarium solani f. pisi, of plants in all fields examined. By seed treatment to insure stand, and the proper use of water (heavy irrigations) profitable production is maintained. Traces of Powdery Mildew (Erysiphe polygoni) were observed in the late pod peas. Many growers are now applying dusting sulfur at the rate of 20 pounds per acre as a control measure. -- E. W. Bodine, August 8-12.

In eastern IDAHO (July 23-29), Bacterial Blight [Pseudomonas pisi] was observed in several fields visited in Bonneville County, while none was found in Jefferson County. It was observed in Teton County, and was very severe in 2 fields in Butte County. In a few fields in Jefferson County, Sclerotinia [sclerotiorum] was causing appreciable damage, especially in one field noted. A Root Rot of undetermined cause was prevalent in the Bonners Ferry area of northern Idaho (Aug. 6-12). -- Earle C. Blodgett.

Powdery Mildew was very prevalent in southern WASHINGTON and northern OREGON. About 600 acres observed on Coppei Mountain in Walla Walla County, Washington (July 24-31), near the finish of harvest for processing, were so completely covered with the Mildew that the field appeared as though it had been sprayed with lime-sulfur. The disease became apparent about July 13, according to field foremen. In the Milton-Freewater district of Oregon

(Aug. 2-3), harvest was complete. Mildew was very prevalent on vines missed in harvest. According to the growers there had been a race to harvest the crop before the Mildew destroyed it. In both areas, because of weather, insects, and diseases, yields were reduced by about 50% compared to 1943. A Root Rot (cause not determined) was prevalent in the Washington area. -- Lytton W. Boyle.

BACTERIAL WILT OF CORN IN IOWA

Edgar F. Vestal

Experimental forecasts of the probable incidence of bacterial wilt (Aplanobacter [Bacterium] stewartii) of sweet corn in the eastern part of the United States were issued from 1935 to 1940[1]. At the end of that time the forecasts were discontinued because it was felt that the correlation between predicted and actual occurrence had been so close that further experimentation was unnecessary.

Iowa has experienced few seasons when bacterial wilt has been serious, so few, in fact, that the disease has not been considered one of Iowa's problems and has been neglected in the breeding of new varieties of pop corn and sweet corn, with the result that the State has no tested highly wilt-resistant varieties of its own to recommend.

The forecasting of probable occurrence of the disease during any season is based on the sum of the mean temperatures for the preceding December, January, and February. Stevens and Haenseler state that if this sum is 90 or less there is little likelihood that bacterial wilt will occur to any great extent during the following season; if the total is 100 or over the disease is likely to be serious; if it is between 90 and 100 infection will probably be intermediate in intensity.

The following table taken from the Iowa Section of the U.S. Department of Commerce, Weather Bureau Climatological Data shows the mean temperatures for the months of December, January, and February, and the total mean from 1930 to 1944 in Fremont County.

Mean Temperatures for the Months of December, January and February and Total Mean as recorded in Fremont County, Iowa, for the years 1930 to 1944.

Year	December	January	February	Total
1929-30	27.2	12.5	38.0	77.7
1930-31	31.3	32.2	38.0	101.5
1931-32	37.1	22.6	32.3	92.0
1932-33	23.11	35.5	25.3	83.91
1933-34	31.8	30.0	28.4	90.2
1934-35	25.4	27.0	33.2	85.6
1935-36	29.0	11.8	9.2	50.0
1936-37	30.6	15.2	23.6	69.4
1937-38	28.1	27.4	32.2	87.7
1938-39	31.2	32.2	24.6	88.0
1939-40	35.1	7.9	26.9	69.9
1940-41	31.4	27.4	27.6	86.4
1941-42	34.7	24.7	27.0	86.4
1942-43	25.4	22.2	34.0	81.6
1943-44	28.2	32.4	30.2	90.8

1 Incidence of bacterial wilt of sweet corn, 1935-1940. Forecasts and performances. M.E. Stevens and C.M. Haenseler. PDR 25:152-157. 1941.

Of the 15 years data recorded only 4 have had combined means totaling as much as 90. Only the year 1931 had a total reaching 100 and that year was noted as having the heaviest bacterial wilt infections recorded in Iowa for the last decade and a half.

In my report for the period ending July 22, I stated that, while Stewart's bacterial wilt of corn had been noted in the experimental plots here at Ames, it had not been reported from any other section of the State. That report was hardly in the mail before Dr. George Semeniuk received a letter and specimens of pop corn from Mr. Harley Walker, County Extension Director for Fremont County, asking for identification of the disease on the specimens. There appeared little doubt that the disease was Stewart's bacterial wilt.

On August 1, in company with Dr. I. E. Melhus, Dr. Semeniuk, Dr. G. M. Watkins, and Dr. Jack Wallin, a trip was made to the southwestern part of the State and a hurried survey made of a small portion of the area reported as containing infected corn. In one field, where some 60 acres are devoted to single-cross pop corn hybrids, every plant was infected, with the female plants being most severely injured. Some 15 to 20% of the plants were infected severely enough to reduce the yield; others, would probably mature their ears with little, if any, loss. Neighboring fields of both pop and field corn were also found infected so that it appeared from information obtained locally that the wilt was rather generally spread over the county.

Since bacterial wilt is generally thought of as a sweet corn disease it was believed best to make a survey of the sweet corn areas of the north central section of the State. On August 3, in company with Dr. J. E. Sass, a trip was made to Marshalltown and a brief interview held with Mr. Verne Felbert, manager of the Marshall Canning Company, who had had no reports of the wilt in the sweet corn areas. However, as a trace of wilt was found in field corn along the highway a further survey was planned. On August 4 and 5, in company with Dr. G. C. Kent, the sweet corn fields in Story, Hamilton, Franklin, and Hardin counties were surveyed for wilt. The common varieties of sweet corn grown in these counties are Iowana, Silver Cross, and Golden Cross Bantam. No bacterial wilt was seen. This indicated that it was not the sweet corn that was being most seriously infected this season.

On August 10 and 11 a more complete survey of the southwestern part of the State was made and as a result a much better picture of the infection was obtained. The center of infection was located in Fremont County with a spread north and east. Most of the seed sown in Fremont appeared to have been home-grown, which may have accounted for the heavy infections there; this appeared more probable from the fact that fields sown with seed purchased from the region of Sac and Ida Counties contained little bacterial wilt.

It appeared that one might expect to find little wilt in the pop corn areas of these latter counties. On August 15 and 16, in company with Dr. Jack Wallin, the pop corn areas of Wall Lake, Lake View, Odeboldt, Ida Grove, and Schaller of Ida and Sac Counties and Spencer in Clay County were surveyed. Only a trace of wilt was found in the region of Spencer where mostly the little White Jap corn is grown. Around the Schaller, Ida Grove, and Odeboldt areas some wilt was found but not enough to contaminate seed. The Wall Lake and Lake View regions were relatively free from wilt. These findings supported the belief that the epiphytotic found in Fremont and in Mills County is local in nature and farmers in these counties may purchase

seed from any of the Sac or Ida County areas with much less danger of introducing wilt through the seed than if purchased locally.
EMERGENCY PLANT DISEASE PREVENTION PROJECT.

REPORTS ON DISEASES OF CORN AND SORGHUM

Reports are of Emergency Plant Disease Prevention Project surveys.

CORN DISEASES: A field of field corn in Whately, MASSACHUSETTS (Aug. 21-24) appeared to be unusually heavily infected with Smut (Ustilago zeae) [U. maydis]. A count revealed one or more Smut galls on 14% of the plants. Smut was observed on 8% of the plants in a 4-acre field of Golden Bantam sweet corn in Hartford County, CONNECTICUT (Aug. 25). -- Robert C. Cassell

In VIRGINIA, hybrid corn plantings in several locations were examined with Dr. M. H. McVickar of the Virginia Polytechnic Institute. Helminthosporium Blight was severe on all varieties at the Glade Springs station in the extreme southwest. Brown Spot [Physoderma zeae-maydis] and Smut were also present. A chlorotic Leaf Spot characterized by concentric rings, which had also been seen commonly in North Carolina, was found on all but 2 of the hybrid varieties grown at Glade Springs. The spot was identified as a heritable genetic characteristic. It was encountered in other plantings also but was more common at Glade Springs.

East of the Blue Ridge, Drought has stunted the corn in most fields, and the leaves have fired prematurely. At Staunton and Orange very little Helminthosporium Blight was present. At Bowling Green and Williamsburg Cercospora Leaf Spot occurred but was of little importance.

The disease that seemed to be causing more death of leaves than any other was a Purple Sheath disease apparently caused by a species of Fusarium which was fruiting abundantly on the even margins of the large oval spot. The fungus did not penetrate the stalk from the sheath lesion. This disease was common in all the varietal tests visited. -- R. E. Atkinson, August 17-26.

With Dr. M. B. Linn of the ILLINOIS Agricultural Experiment Station, uneven stands of late-planted hybrid sweet corn were observed in northern Illinois during the week ending August 5. Fifty percent of the male or pollen plants in one seed-production field were dead or missing. A Seedling Blight or Root Rot is suspected, especially since Dr. Benjamin Koehler, in conversation with the writer, stated that he had made isolations of Pythium sp. from the roots of similar plants apparently from the same fields earlier in the summer. However, as Dr. Koehler mentioned, the fact that Pythium was isolated did not rule out the possibility of other fungi being responsible. In one of the trial plantings of Golden-Cross hybrid from various commercial sources examined in Woodford County, typical Bacterial Wilt was responsible for the death of 1% of the plants. -- J. S. Tidd.

In MINNESOTA, corn fields in Washington, Chisago, Anoka, and Isanti Counties were examined for Helminthosporium turcicum but there was no spread of the organism from the area near Forest Lake, Washington County, where the disease was first found on August 16 (see preceding issue PDR). In Chisago County, between North Branch and Lindstrom, Smut was causing heavier infection than elsewhere in eastern Minnesota. Many fields had up to 25% of the plants infected. -- Ian W. Tervet, August 21-26.

The amount of Smut seen this year in IOWA is variable but appears to be on the increase. This appears to be one of the problems for the breeders, as some of the hybrid pop corn was found with up to 20 to 25% of the tassels bearing galls. Rust, Puccinia sorghi, was found on all kinds of corn; it was most general on sweet corn on which infection varied from a trace to 1 or 2%. -- Edgar F. Vestal, period ending August 19.

In MISSOURI, a survey for the incidence of disease in field corn was made during the week ending August 26 along a route extending from central Missouri to the Kansas border and then south to Newton and Barry Counties in southwestern Missouri. All counties traveled lie south of the Missouri River. Frequent, moderately heavy rains occured during the entire period over all of the area visited, in some instances restricting the extent of the survey. Except in certain localized areas in the extreme southwestern section, where crops appear to have suffered somewhat from the lack of moisture earlier in the summer, there appears to have been sufficient rainfall for good crop development in the area surveyed. Bacterial Wilt leaf lesions were in evidence in the majority of fields. The amount of leaf area involvld varied greatly in the different fields and in a few instances some reduction in yield may result from the infection. In general, however, the ears on the affected plants were well developed and it seems unlikely that sufficient leaf area has been killed to cause any appreciable damage. Smut appeared to be of distinctly minor importance. In none of the fields examined did Smut affect more than an occasional plant. Light Leaf Rust infection was noted in about 25% of the plantings. Fifty percent of the plantings showed plants that were prematurely dead. The lower nodes of such plants, upon cutting, were dark brown in color, suggesting Diplodia zeae infection. Leaf Spotting, characteristic of a heritable chlorophyll deficiency, was observed in many fields, affecting few to many plants. In one field an occasional secondary ear showed Nigrospora oryzae decay. -- T. W. Bretz.

In northern IDAHO, a trace of Head Smut (Sorosporium reilianum) [Sphacelotheca reiliana] was noted on corn at Post Falls in Kootenai County. -- Earle C. Blodgett, August 6-12.

SORGHUM DISEASES: In MISSISSIPPI Ascochyta sorghina was found in small amounts in 2 large acreages near Washington in Adams County. -- Douglas C. Bain, August 8-12.

In southern LOUISIANA, 2 relatively large fields of sorghum, one grain and the other sweet, were surveyed. In the first, near Franklin, the following leaf diseases were quite common: Rust (Puccinia purpurea), Zonate Leaf Spot (Glococercospora sorghi), Bacterial Stripe (Phytomonas [Pseudomonas] andropogoni), and Cercospora spot (C. sorghi). In the other field at Albania plantation near Jeanerette, Zonate Leaf Spot, Sooty Stripe (Titaeospora andropogonis), and Rust were very common; no bacterial diseases or other fungous diseaseswere noted in this field. This is the first time that the writer has observed heavy infections of Zonate Leaf Spot and of Sooty Stripe occurring on the same leaves. On some African sorghums growing on the Station grounds at Baton Rouge, a Coniothyrium-like fungus was constantly associated with an unfamiliar Leaf Spot; the fungus was later identified by Dr. Lindsay S. Olive as a species of Microdiplodia. It was not particularly common. A Leaf Spot that is very common on some varieties, temporarily identified as Bacterial Spot (Pseudomonas holci) has been under

observation in the same field. -- Douglas C. Bain, August 1-8.

One field of sorghum seen between Storm Lake and Schaller in northwestern IOWA was affected by a bacterial streaking of the leaves which appeared quite certainly to be caused by Bacterium [Pseudomonas] andropogoni. -- Edgar F. Vestal, period ending August 19.

In MISSOURI, Bacterial Stripe was generally prevalent in all sorghum plantings examined along a route from central Missouri to the Kansas border and south to Newton and Barry Counties in southwestern Missouri. The extent of leaf spotting was variable; in a few fields an estimated 33% of the leaf area was involved, while in others the disease was of distinctly minor importance. Covered Kernel Smut (Sphacelotheca sorghi) was observed in 50% of the plantings. In these fields from 5 to 50% of the heads were partially to completely smutted. The average number of plants affected for all fields was 8%. -- T. W. Bretz, week ending August 26.

SOYBEAN DISEASES IN ARKANSAS

Howard W. Larsh

Approximately 500 acres were surveyed during the period July 17 to August 12.

Bacterial Blight (Pseudomonas glycinea) occurred early in the growing season and could be seen on the lower leaves in plantings in Arkansas and Jefferson Counties. At the present time it is difficult to differentiate with any certainty between the bacterial diseases.

Bacterial Pustule (Xanthomonas phaseoli var. sojense) still continues to be the most severe disease of soybean in Arkansas. Very few, if any, plantings are free from this bacterial disease. Slight to moderate defoliation and yellowing of the leaves on some varieties had occurred in Crittenden and Desha Counties.

Frog-Eye Leaf Spot (Cercospora sojina) was observed in plantings in Desha and Crittenden Counties. In a test planting near McGehee (Desha County), nearly all of the varieties were infected by this fungus. The amount of loss varied from a trace to nearly 2% of the leaf area invaded.

Alternaria Leaf Spot (Alternaria sp.) Soybeans planted in a test planting near Texarkana (Miller County) were severely infected by Alternaria. In several instances large areas of the leaf surface were invaded by this fungus giving rise to large brown spots with characteristic concentric rings. Alternaria Leaf Spot was also observed in several of the plantings surveyed.

Brown Spot (Septoria glycines) occurred in a test plot near McGehee (Desha County). The infection was limited to only a few plants.

Fusarium Blight (Fusarium oxysporum f. tracheiphilum) was observed in 3 plantings. The most severely infected planting occurred in Desha County where a loss of less than 1% of the plants was observed.

Downy Mildew (Peronospora manshurica) infected plants were observed in 3 plantings, in most on a small number of plants. Affected plantings were located in Crittenden, Desha, and Hempstead Counties.

Charcoal Rot (Sclerotium bataticola) was observed in nearly every planting surveyed. In a large field near Athlestan, (Mississippi County) Charcoal Rot caused a loss of 60% in a localized infected area, with an average

infection for the entire field estimated at 5%.

Plants infected with Southern Blight (Sclerotium rolfsii) were observed in a planting on the Fruit and Vegetable Branch Experiment Station, Hope, Hempstead County. The loss, at the time of this survey, was limited to only a few plants.

Mosaic (Virus) infected plants occurred in nearly every planting surveyed; in most instances, however, it was limited to only a few plants in each infected field.

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SOYBEAN DISEASES IN WISCONSIN

Edwin E. Honey

A brief inspection trip for soybean diseases was made between August 11 and 15 inclusive, in company with Drs. F. R. Jones, W. B. Allington, W. H. Johnson and Wayne Bever. Professors R. E. Vaughan and James H. Torrie were present also on August 11 in Dane County.

Inspections of soybean fields were made in Dane, Sauk, Eau Claire, Dunn, Washburn, Wood, Adams, and Columbia Counties. In Dane, Eau Claire, and Washburn Counties examination of Nursery and Variety Test Plots at State Experimental Farms were made.

Soybeans for seed production were in the blossom to late podded stages. Some fields in a much earlier stage of development appeared to have been broadcast to soybeans following other crops and were evidently for forage use only.

Diseases observed, based on field symptoms, and their degree of severity are given in Table 1. Bacterial Blight was the most general disease of soybean observed, occurring as traces in all counties inspected. Bacterial Pustule was markedly absent; only one case was observed in Eau Claire County. Brown Spot caused by Septoria glycines first reported for Wisconsin on volunteer soybeans at the University Hill Farm (PDR 28(20): 656) has since been found in soybeans in the Variety Test Plots in Dane County. A trace of Mosaic was observed in 4 of the 8 counties inspected. Bud Blight, also a virus disease, believed to be one of the more important diseases in the Middle West, was found in the Variety Test Plots in Dane, Eau Claire and Washburn Counties only. Under Wisconsin conditions this year, the incidence and severity of Bud Blight appears to be rather limited. In marked contrast to last year, Downy Mildew was absent or present in very slight amounts. A trace was observed in 2 fields in Dane County only.

A characteristic marginal yellowing of leaves and the occurrence of somewhat dwarfed plants with such yellowed leaves was observed in small areas or spots in fields in all Counties inspected. The symptoms suggested a Deficiency trouble of some kind. In many instances such spots were associated with abundance of quack and foxtail grasses which suggested that the competition between the grass and soybean resulted in a deficiency trouble in the soybean.

Table 1. Diseases and Injuries of Soybeans Examined in Wisconsin August 11-15.

County	Soybean Diseases Encountered					Drought Conditions
	Mosaic	Bud Blight	Bacterial Blight	Brown Spot	Downy Mildew	
Adams	-	-	Trace	-	-	Severe
Columbia	-	-	Trace	-	-	Severe
Dane	Slight	Trace	Trace	Trace	Trace in 2 fields	-
Dunn	Trace	-	Trace	-	-	Severe
Eau Claire	Trace	Trace	Trace	-	-	Severe
Sauk	Trace	-	Trace	-	-	Some
Washburn	-	Trace	Trace	-	-	-
Wood	-	-	Trace	-	-	Slight

Drought conditions were assuming damaging effects in all counties inspected except Dane and Washburn where marginal conditions existed. The severity of drought and damaging effect is somewhat spotty varying with type of soil and soil management.

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